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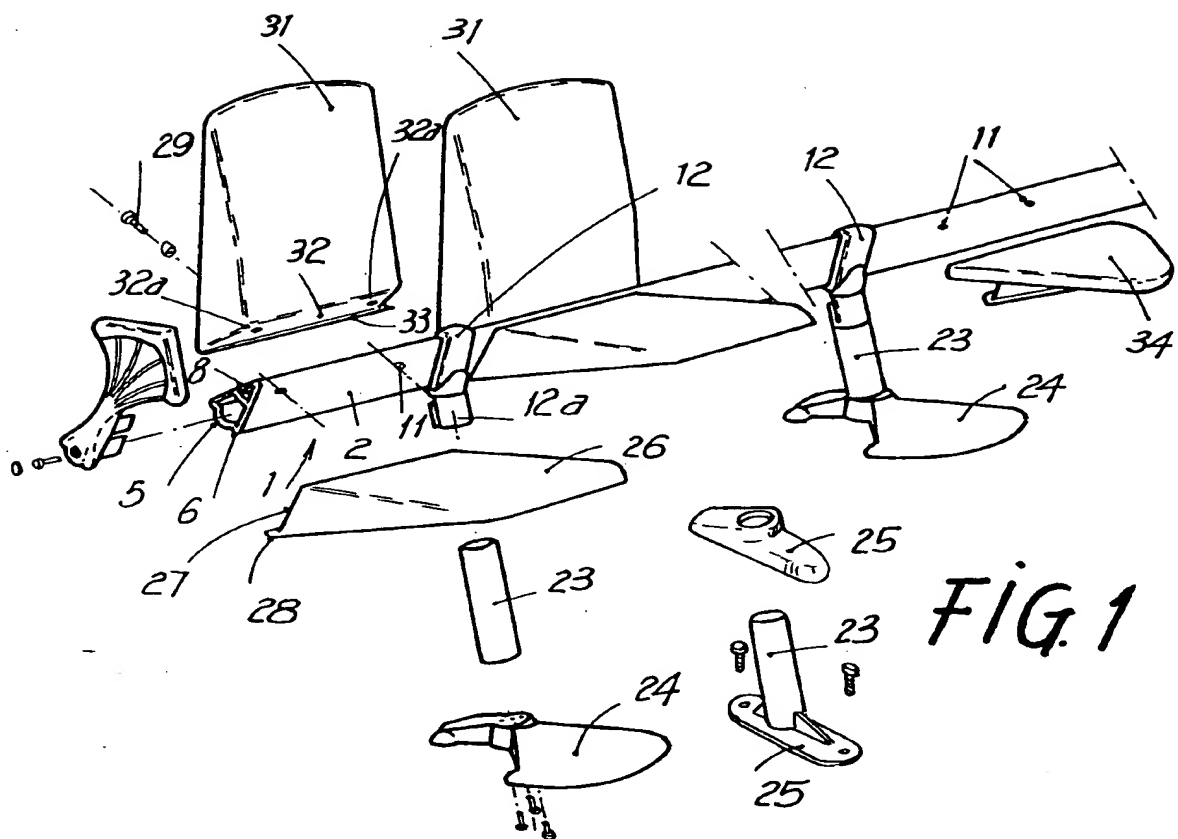
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⑤④ **Structure for the formation of rows of seats and seat formed with this structure.**

⑤⑦ It comprises a tubular longitudinal beam (1) with two sides (2) and (3) forming an angle and a dished side (5) flanked by ribs (6) and depressions (7) into which there slot some shoulders (28) and (33) of the sides (27) and (32) of the seats (26) and (31), secured by bolts (19) to the longitudinal beam ; some small tables (34) with bracket (35) provided with an inclined side (36) with a shoulder (36a) coupled to a rib (6) of the longitudinal beam (1) ; and two semi-clamps (12) and (13) secured around the longitudinal beam, coupled to the end of the tubular legs (23).

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**FIG. 1**

The present invention refers to a structure for the formation of rows of seats, and to a seat formed with this structure.

#### BACKGROUND OF THE INVENTION

The structure object of patent no. 8903161 is formed of a tubular longitudinal beam of rectangular cross-section, to two of whose larger opposing sides are fixed the seat itself and the backrest, formed by two pieces, preferably of a dish-like metal sheeting, provided with respective flat and inclined faces destined to be juxtaposed upon the corresponding faces of the longitudinal beam, to which they are attached by bolts. The longitudinal beam itself incorporates panels which constitute little tables. The longitudinal beam of the structure is supported by legs provided with a clamp fixed around the longitudinal beam.

Practice has shown that it is possible to make some improvements to the structure object of the mentioned patent, basically affecting the longitudinal beam, in order to improve the solidity of the seat and backrest fastening to the longitudinal beam itself.

Other improvements to the structure also affect the configuration of the clamp of the legs, which is simpler than in the embodiment of the mentioned patent, and the fastening means of the panels which constitute the little tables.

#### DESCRIPTION OF THE INVENTION

In the structure for the formation of rows of seats, object of the present patent, the longitudinal beam includes exterior ribs and depressions, while the pieces which constitute the seats and the backrests are provided on the faces which are juxtaposed to those of the longitudinal beam with shoulders whose contour corresponds to that of the ribs of the longitudinal beam, so that they can be coupled to the same in the fitting position.

The tubular longitudinal beam includes two flat sides which form a solid angle with each other, on which are juxtaposed the flat faces of the pieces which make up the seats and the backrests, which longitudinal beam presents a third rear face of dished profile, flanked by longitudinal depressions and ribs, into which are coupled the shoulders of the pieces which constitute the seats and backrests.

The panels which make up the little tables are joined to a bracket and assembly piece on the longitudinal beam, which piece includes, at least, a rigid wing which projects from below with respect to the panel, provided with fastening means to one of the sides of the longitudinal beam. The rigid wing is provided with a shoulder which has a profile corresponding with the ribs of the longitudinal beam, for coupling thereof to one of them in the assembly position.

The projecting wing of the support piece of the

panels which make up the little tables presents some orifices, the positions of which coincide with those of the orifices with which the faces of the seats and backrests are provided, and which in turn coincide with other orifices throughout the length of one of the faces of the longitudinal beam, to permit the passage of fastening bolts for the seats and little tables.

The longitudinal beam is provided with spaced-apart openings into which there slot one of the semi-clamps which make up the securing clamp of each of the legs which support the longitudinal beam, opposite which openings the longitudinal beam is fitted with an internal partition provided with an orifice facing another orifice on the opposite side of the longitudinal beam itself. These orifices allow for the passage of the union bolt of the two semi-clamps.

One of the semi-clamps presents the face for coupling to the longitudinal beam with a profile complementary to that of the dished face of the longitudinal beam and to its ribs and depressions.

The semi-clamps are juxtaposed to each other by two complementary faces, one of them presenting a prolongation in the form of a tail, to which is fitted a third piece with means of guidance with respect to that prolongation, fitted with bolts accessible from the exterior in order to achieve expansion or approximation of this piece with respect to the prolongation of the semi-clamp. The third piece and the tail of one of the semi-clamps are housed in the upper end of the tubular leg in which is fitted the clamp for securement to the longitudinal beam.

#### BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of all that has been set forth in the present specification, there are attached some drawings in which, solely by way of example, a practical case of embodiment of the structure object of the present invention is represented.

In these drawings, figure 1 is a perspective view exploded diagram of a row of seats provided with the structure described; figure 2 is a perspective view exploded diagram of one of the union clamps of the longitudinal beam; figure 3 is a cross-section view of one of the clamps incorporated into the corresponding leg and fixed around the longitudinal beam; figure 4 is a similar view showing the union of a seat and a backrest to the longitudinal beam; figure 5 is a cross-section view of a little table fixed to the longitudinal beam; and figure 6 is a perspective view of an assembled row of seats.

#### DESCRIPTION OF A PREFERRED EMBODIMENT

With reference to the drawings, the structure object of the present patent comprises a longitudinal beam of general reference -1- which has a cross-section shaped approximately like a sector of a circle,

with two flat sides -2- and -3- which form an angle between them with a rounded edge -4-, and a third rear side -5-, dished, throughout the length of which and near its edges the longitudinal beam presents two longitudinal ribs -6- and near them corresponding longitudinal depressions -7- limiting the dished part -5- of this rear face of the profile. The interior of the profile is reinforced by a transversal partition -8- near the edge -4-, provided with spaced orifices -9-.

At the edge -4- of the structure there are some spaced-apart openings -10-, which affect part of the sides -2- and -3-, facing the orifices -9- of the partition -8-.

On the sides -2- and -3- of the longitudinal beam -1- there are pairs of orifices -11-, spaced apart regularly, with the orifices of each pair set at the same distance apart.

In the openings -10- of the longitudinal beam there slot some semi-clamps -12-, complemented by other semi-clamps -13-, in such a way that each pair constitutes a clamp destined to be secured to the longitudinal beam -1- by means of a transversal bolt -14- which joins them and passes through the longitudinal beam -1- via orifices -15- aligned with respect to orifices -9- provided for this purpose (figure 3).

The semi-clamps -12- and -13- present juxtaposed inclined surfaces -16- and -17-, with aligned orifices -18- for the fastening of an optional bolt -18a-. Semi-clamp -13- presents an internal profile complementary to the profile of the dished face -5- and the depressions -7- of the longitudinal beam -1-, for perfect coupling to the same.

The semi-clamp -12- has a prolongation in the form of a tail -12a-, to which a piece -19- is juxtaposed. The tail -12a- and the piece -19- have complementary orifice -20- and pin -21- sets, which centre and guide the positions of both. The piece -19- is provided with two bolts -22-, threaded into orifices -22a-, which press against the tail of the semi-clamp -12-.

The assembly formed by the tail -12a- and the piece -19- is destined to be housed in the upper end of tubular columns -23- provided with feet -24- or -25-. These columns with their respective feet constitute the support legs for the longitudinal beam -1- by means of the semi-clamps -12- and -13-, coupled to each other around the same, as illustrated in figure 3 of the drawings. In this position, when the bolts -22- are operated, the piece -19- moves away from or closer to the tail -12a-, thus fixing or releasing the clamp assembly in relation to the end of the tubular column -23-.

To the faces -2- of the longitudinal beam -1- are anchored the seats -26-, provided with a rear surface -27- finished with an arched shoulder -28- for fitting around the corresponding rib -6-. The fastening of the seats -26- is carried out by means of bolts -29- which pass through orifices -30- provided in the surface -27-, and the orifices -11- of the longitudinal beam -1- (figure 4).

ure 4).

The bolts themselves -29- fix to backrests -31-, paired up with the seats -26-, in a similar way to the latter, with a lower surface -32- with orifices -32a- aligned with orifices -11- and -30-. The lower surface -32- is finished with an arched shoulder -33- which fits around the corresponding rib -6-.

The structure also comprises some little tables -34- fitted with a lower bracket -35-, with an inclined wing or surface -36-, provided with orifices -37- which can be aligned with orifices -11- of the longitudinal beam -1-, for passage of the fastening bolts -38- (figure 5). The inclined surface -36- presents a shoulder -36a- which may be adapted around one of the ribs -6- of the profile -1-.

It should be noted that the orifices -37- of the surface -36- of the bracket -35- have the same layout as the orifices -30- and -32a- of the surfaces -27- and -32- of the seats -26- and backrests -31-, so that it is possible to assemble a little table in the place of a seat and backrest.

The structure is completed by some arms or side endings -39-, with means for fixing of same to the ends of the longitudinal beam -1-.

Of the described structure it is necessary to stress the configuration of the longitudinal beam -1- fitted with sets of ribs -6- and depressions -7-, into which the seat and backrest shoulders -28- and -33- fit, in such a way that the longitudinal beam ensures not only union by juxtaposition of the surfaces -27- and -32- of the seats and backrests to faces -2- and -3- of the longitudinal beam -1- by means of fastening bolts -29-, but also guarantees perfect coupling of those components, thanks to the fitting mentioned above, providing the structure with greater safety and solidity.

Independent of the object of the invention shall be the materials used in manufacturing of the components of the structure, shapes and dimensions of same and all accessory details which might be presented, as long as they do not affect its essential nature.

#### 45 Claims

1. Structure for the formation of rows of seats, formed of a tubular longitudinal beam (1), to two of whose sides are fixed the seat itself (26) and the backrest (31), formed by two pieces, preferably of a dish-like metal sheeting, provided with respective flat and inclined faces destined to be juxtaposed upon the corresponding faces of the longitudinal beam, to which they are attached by bolts, to which longitudinal beam are incorporated panels which constitute little tables (34), while the longitudinal beam of the structure is supported by legs provided with a clamp (12, 13)

fixed around the longitudinal beam, characterized in that the longitudinal beam includes exterior ribs (6) and depressions (7), while the pieces which constitute the seats (26) and the backrests (31) are provided, on the faces which are juxtaposed to those of the longitudinal beam, with shoulders (28, 33) whose contour corresponds to that of the ribs of the longitudinal beam, so that they can be coupled to the same in the assembly position.

2. Structure as claimed in claim 1, characterized in that the tubular longitudinal beam includes two flat sides (2, 3) which form a solid angle with each other, on which are juxtaposed the flat faces (27, 32) of the pieces which make up the seats and the backrests, which longitudinal beam presents a third rear face (5) of dished profile, flanked by some longitudinal depressions (7) and ribs (6), in which are coupled the shoulders of the pieces which constitute the seats and backrests.
3. Structure as claimed in claim 1, characterized in that the panels (34) which make up the little tables are joined to a bracket and assembly piece (35) on the longitudinal beam, which piece includes, at least, a rigid wing (36) which projects from below with respect to the panel, provided with fastening means to one of the sides of the longitudinal beam, which wing is provided with a shoulder (36a) which has a profile corresponding with the ribs (6) of the longitudinal beam, for coupling thereof to one of them in the assembly position.
4. Structure as claimed in claims 1 and 3, characterized in that the projecting wing (36) of the support piece of the panels (34) which make up the little tables presents some orifices (37), the positions of which coincide with those of the orifices (30) with which the faces (27, 32) of the seats and backrests juxtaposed to the faces (2, 3) of the longitudinal beam are provided, and which in turn coincide with other orifices (11), provided throughout the length of one of the faces of the longitudinal beam, to permit the passage of fastening bolts (29) for the seats and little tables.
5. Structure as claimed in claim 1, characterized in that the longitudinal beam (1) is provided with spaced-apart openings (10) into which there slot one of the semi-clamps (12) which make up the securing clamp of each of the legs supporting the longitudinal beam, opposite which openings the longitudinal beam is fitted with an internal partition (8) provided with an orifice (9) facing another orifice (15) on the opposite side of the longitudinal beam itself, said orifices allowing for the passage of the union bolt of the two semi-clamps.
6. Structure as claimed in claims 1 and 2, characterized in that one of the semi-clamps (13) presents the face for coupling to the longitudinal beam with a profile complementary to that of the dished face (5) of the longitudinal beam and of its ribs and depressions.
7. Structure as claimed in claims 1, 2 and 6, characterized in that the semi-clamps are juxtaposed to each other by complementary faces 16,17), only one of them presenting a prolongation in the form of a tail (12a), to which is fitted a third piece (19) with means of guidance with respect to that prolongation, fitted with bolts (22) accessible from the exterior in order to achieve expansion or approximation of this piece with respect to the prolongation of the semi-clamp, both pieces being housed in the upper end of the tubular leg (23) in which is fitted the clamp for securement to the longitudinal beam.
8. Seat formed with the structure of any of the previous claims.

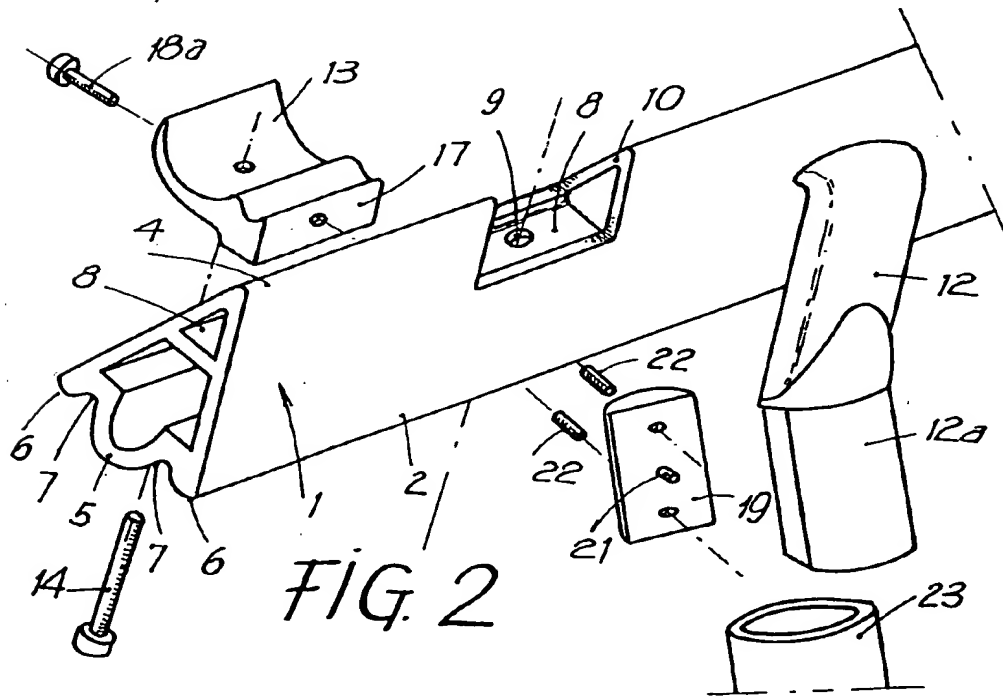
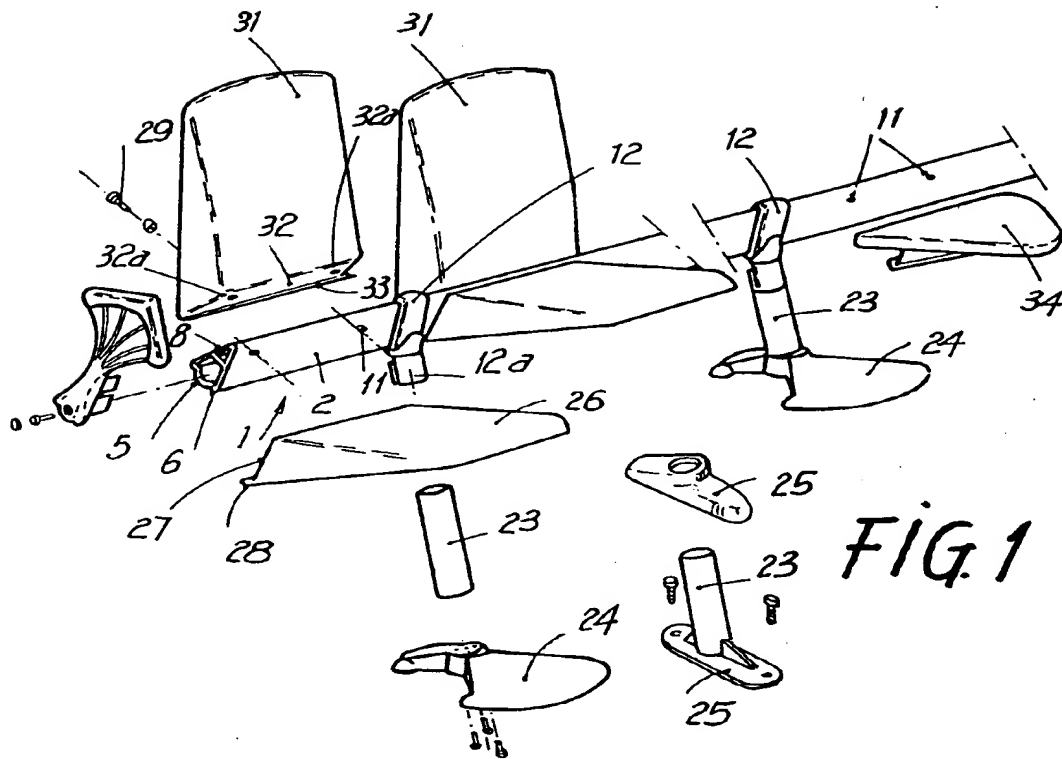
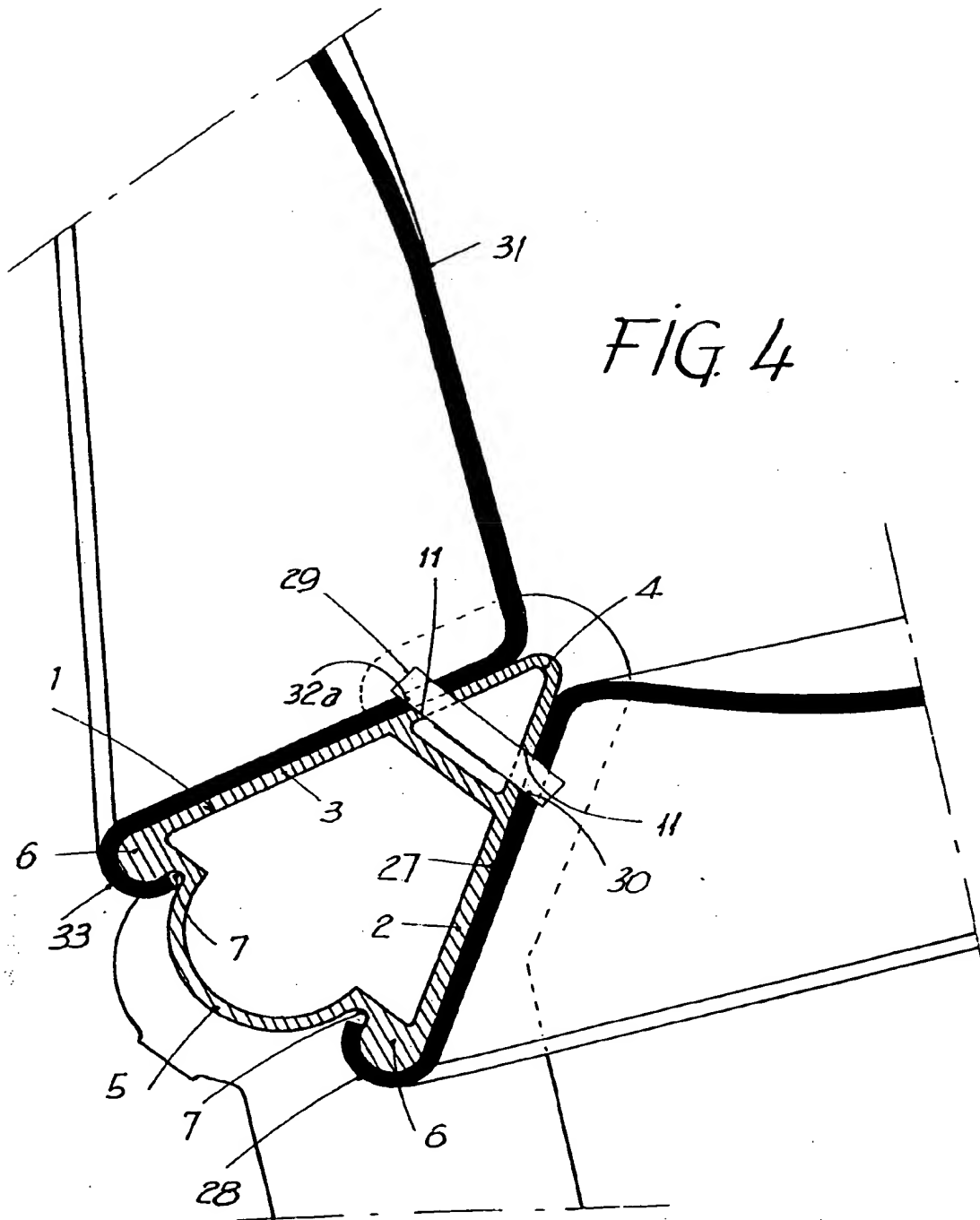
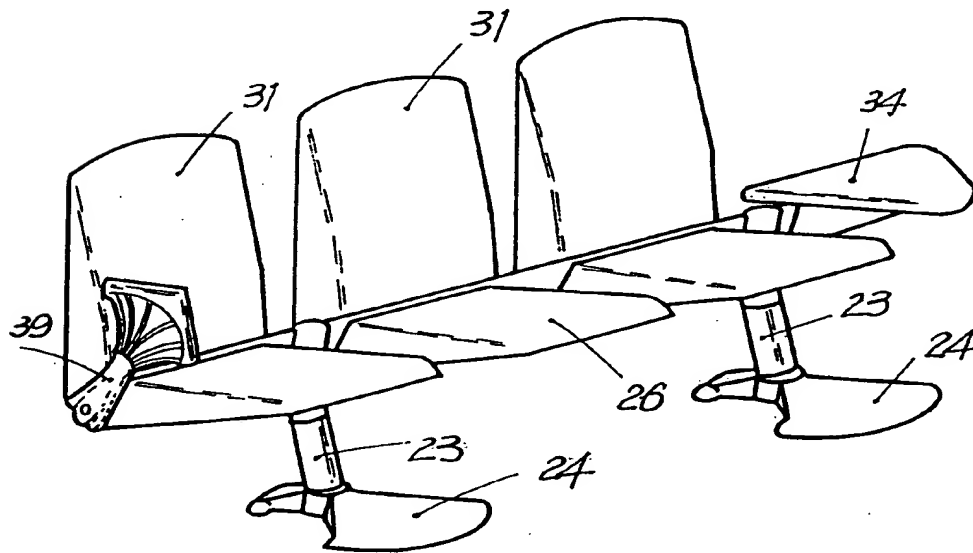
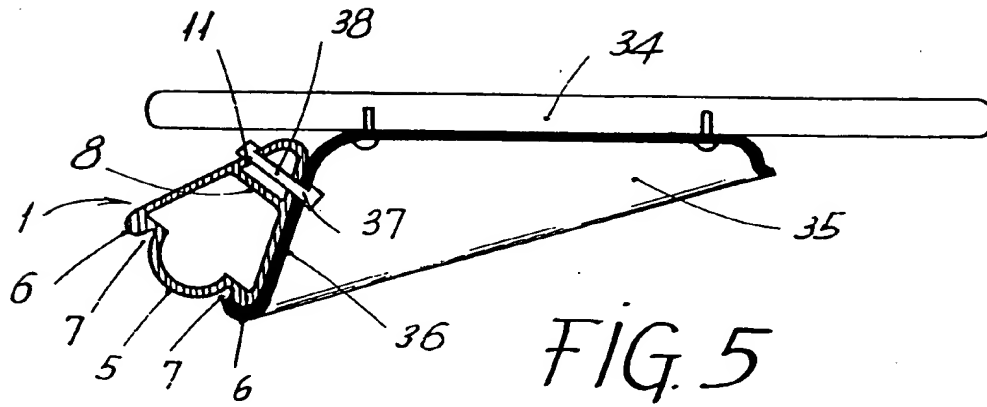


FIG. 3









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# EUROPEAN SEARCH REPORT

Application Number

EP 91 50 0085

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D, P. A	EP-A-0 419 395 (INDUSTRIAS FIGUERAS)	1	A47C1/12
	* the whole document *		
A	US-A-3 990 741 (SNYDER)		
A	FR-A-2 139 844 (ANONIMA CASTELLI)		
A	US-A-3 230 005 (STAPLES)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A47C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 OCTOBER 1991	Examiner VANDEVONDELE J.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone V : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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